

Application No.: 09/921,066
Date of Response: 4/30/2004
Reply to Action of: 04/19/2004

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A cardiac assist device comprising means for delivery of
5 electrical current from said cardiac assist device to a heart wherein said
 means for delivery of electrical current is in electrical communication with
 said cardiac assist device and said heart,
 means for transmitting electrical current from said heart to said cardiac assist
 device wherein said means for transmitting electrical current is in electrical
10 communication with said cardiac assist device and said heart,
 a control circuit adapted to be responsive to an activation source selected from the
 group consisting of an optical activation source, a direct current activation
 source, and combinations thereof and
 means for ceasing the flow of electrical current through a first circuit wherein said
15 first circuit is selected from the group consisting of said means for delivery
 of electrical current, said means for transmitting electrical current, and
 combinations thereof, wherein said means for ceasing the flow of electrical
 current is controlled by said control circuit ~~a control circuit which is~~
 ~~adapted to be responsive to an activation source selected from the group~~
20 ~~consisting of an optical activation source, a direct current activation~~
 ~~source, and combinations thereof~~, wherein said means for ceasing the
 flow of electrical current is disposed between said cardiac assist device

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- and said means for delivery of electrical current and said means for transmitting electrical current, and means for receiving pulsed radio frequency fields from an electromagnetic source external to said cardiac assist device, wherein said means for receiving is selected from the group consisting of said means for delivery of electrical current, said means for transmitting electrical current, said means for ceasing the flow of electrical current, and combinations thereof, wherein said control circuit comprises an optical switch.
2. (Canceled) ~~The cardiac assist device as recited in claim 1, wherein said means for activating said parallel resonant circuit comprise optical means.~~
3. (Canceled) ~~The cardiac assist device as recited in claim 1, wherein said control circuit comprises an optical switch.~~
4. (Currently Amended) The cardiac assist device as recited in claim [3-1], wherein said optical switch comprises a pin type photodiode.
5. (Original) The cardiac assist device as recited in claim 4, further comprising an optical fiber connected to said optical switch.
6. (Currently Amended) The cardiac assist device as recited in claim [3-1], further comprising said activation source wherein said optical switch is activated by light from said activation source.
7. (Once Amended) The cardiac assist device as recited in claim 6, wherein said control circuit is adapted to be disposed within a biological organism.
8. (Once Amended) The cardiac assist device as recited in claim 7, wherein said activation source is disposed outside of said biological organism.

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9. (Once Amended) The cardiac assist device as recited in claim 7, wherein said
activation source is adapted to be disposed within said biological
organism.
10. (Once Amended) The cardiac assist device as recited in claim 8, wherein
5 said activation source provides light with a wavelength of from about 750
to about 850 nanometers.
11. (Original) The cardiac assist device as recited in claim 1, wherein said
cardiac assist device is a pacemaker.
12. (Once Amended) The cardiac assist device as recited in claim 1, further
10 comprising a magnetic resonance scanner, wherein said electromagnetic
source is said magnetic resonance scanner.
13. ~~(Canceled) The cardiac assist device as recited in claim 1, further
comprising means for varying the quality factor of said means for ceasing
the flow of electrical current.~~
- 15 14. (Currently Amended) The cardiac assist device as recited in claim [43 1],
wherein ~~said means for varying the quality factor of said means for~~
ceasing the flow of electrical current is a variable resistor.
15. (Original) The cardiac assist device as recited in claim 1, wherein said
means for receiving pulsed radio frequency fields is adapted to receive
20 pulsed radio frequency fields in the range from about 30 MHz to about
1000 MHz.
16. (Original) A cardiac assist device comprising a pacing lead and a sensing
lead wherein said pacing lead and sensing lead are in electrical

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- communication with said cardiac assist device and a heart, further comprising control circuit which is adapted to be responsive to an activation source selected from the group consisting of an optical activation source, a direct current activation source, and combinations thereof, further comprising a resonant circuit wherein said resonant circuit controls the flow of electrical current through a first circuit wherein said first circuit is selected from the group consisting of said pacing lead, said sensing lead, and combinations thereof, wherein said resonant circuit is controlled by said control circuit, ~~a control circuit which is adapted to be responsive to an activation source selected from the group consisting of an optical activation source, a direct current activation source, and combinations thereof~~, wherein said resonant circuit is disposed between said cardiac assist device and said pacing lead and said sensing lead, and an antenna adapted to receive pulsed radio frequency fields from an electromagnetic source external to said cardiac assist device, wherein said antenna is selected from the group consisting of said pacing lead, said sensing lead, said resonant circuit, and combinations thereof.
17. (Original) The cardiac assist device as recited in claim 16, wherein said control circuit comprises an optical switch.
18. (Original) The cardiac assist device as recited in claim 17, wherein said optical switch comprises a pin type photodiode.
19. (Original) The cardiac assist device as recited in claim 18, further comprising an optical fiber connected to said optical switch.

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20. (Original) The cardiac assist device as recited in claim 17, further comprising
said activation source wherein said optical switch is activated by light from
said activation source.
21. (Original) The cardiac assist device as recited in claim 20, wherein said
5 control circuit is adapted to be disposed within a biological organism.
22. (Original) The cardiac assist device as recited in claim 21, wherein said
activation source is disposed outside of said biological organism.
23. (Original) The cardiac assist device as recited in claim 21, wherein said
activation source is adapted to be disposed within said biological
10 organism.
24. (Original) The cardiac assist device as recited in claim 22, wherein said
activation source provides light with a wavelength of from about 750 to
about 850 nanometers.
25. (Original) The cardiac assist device as recited in claim 16, wherein said
15 cardiac assist device is a pacemaker.
26. (Original) The cardiac assist device as recited in claim 16, further comprising
a magnetic resonance imager, wherein said electromagnetic source is
said magnetic resonance imager.
27. (Original) The cardiac assist device as recited in claim 16, further comprising
20 means for varying the quality factor of said resonant circuit.
28. (Original) The cardiac assist device as recited in claim 27, wherein said
means for varying the quality factor of said resonant circuit is a variable
resistor.

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29. (Original) The cardiac assist device as recited in claim 16, wherein said antenna is adapted to receive pulsed radio frequency fields in the range from about 30 MHz to about 1000 MHz.